

## Processing clitic pronouns in Bulgarian – Evidence from normal and agrammatic comprehension

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Clitic clusters display a complicated interaction of prosodic and syntactic properties which determines their word order and stress patterns. In Bulgarian, short pronouns appear as unstressed verbal enclitics in positive utterances (1). Proclitic negation attracts the pronouns and forms with them a prosodic unit stressed on the second syllable, the pronoun (2). While nominal objects do not move (4), pronouns in situ violate prosodic requirements (3).

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| 1. Mij se REFL ACC / go PER 3SG ACC MASC sega! | Wash yourself / it now!       |
| 2. Ne sé mij / Ne gó mij sega!                 | Don't wash yourself / it now! |
| 3. *Ne mij se/go sega!                         |                               |
| 4. Ne mij deteto sega!                         | Don't wash the child now!     |

Theoretical linguistics characterizes the behaviour of object clitics in terms of 'non-trivial chains' (Boskovic 2001). In the course of syntactic derivation, clitics undergo movement creating a chain of copies which are sensitive to prosodic requirements on the output. The overt realisation of a higher or lower copy depends on phonological constraints like enclitisation requirements.

The sequencing of clitical pronouns can be seen as a potential source of linguistic variation not only in aphasic populations, but also in neurologically unimpaired speakers. Problems ranging from a general unavailability of pronominal clitics to word order changes of different acceptability levels are well attested in the speech of non-fluent patients. In line with the slow-syntax-hypothesis (Burkhardt et al. 2008), we test the assumption that deficits in pronominal use are due to the protracted establishment of syntactic structure in non-fluent patients. We conducted a self-paced reading study with 8 Bulgarian agrammatics and 31 controls. Sensitivity to clitic displacement under negation was tested using sets consisting of 2 well-formed and one ill-formed imperative sentence (1-3). The impact of syntactic binding on pronoun processing was investigated by iterating personal and reflexive pronouns in transitive sentences.

Results show that normal speakers react to the word order violation not directly at the place of its detection (pronoun) but while processing the next word. In contrast to them, non-fluent patients exhibit longer RTs for the misplaced pronouns, be they personal or reflexive clitics. The process of syntactic binding required for the interpretation of reflexive pronouns is reflected in longer RTs for reflexive as compared to personal pronouns in all experimental conditions in the control data, but not in the aphasic data. The aphasics exhibit a similar distinction between reflexive and personal pronouns only in positive sentences, in which the pronoun remains in situ. When processing demands increase (as assumed for negative utterances), no RT difference between the pronominal types occurred. This result is particularly pronounced in the ill-formed sentences.

The results suggest that the tested phono-syntactic violation does not cause serious processing problems for the normal speakers, who easily overcome the prosodic unevenness. The generally slow agrammatic RTs exhibit a pattern which to a certain degree resembles normal comprehension. These findings reveal retained sensitivity of non-fluent speakers to prosodic and syntactic well-formedness conditions on clitic clusters in Bulgarian and lend support to the slow-syntax hypothesis.

- Boskovic, Z. (2001). On the nature of the syntax-phonology interface. Clitization and related phenomena. Amsterdam: Elsevier
- P. Burkhardt, S. Avrutin, M.M. Piñango, & E. Ruigendijk. (2008). Slower-than-normal syntactic processing in agrammatic Broca's aphasia: Evidence from Dutch. *Journal of Neurolinguistics*, 21, 2, 120-137.